HUMAN NMDAR1 cDNAs

HIPPOCAMPUS NMDA10
14000 BPI

HIPPOCAMPUS NMDA11
14000 BPI

HIPPOCAMPUS NMDA7
13032 BPI

HIPPOCAMPUS NMDA3
1590 BPI

PvuII HindIII PstI
SmaI

63 201 363

1087
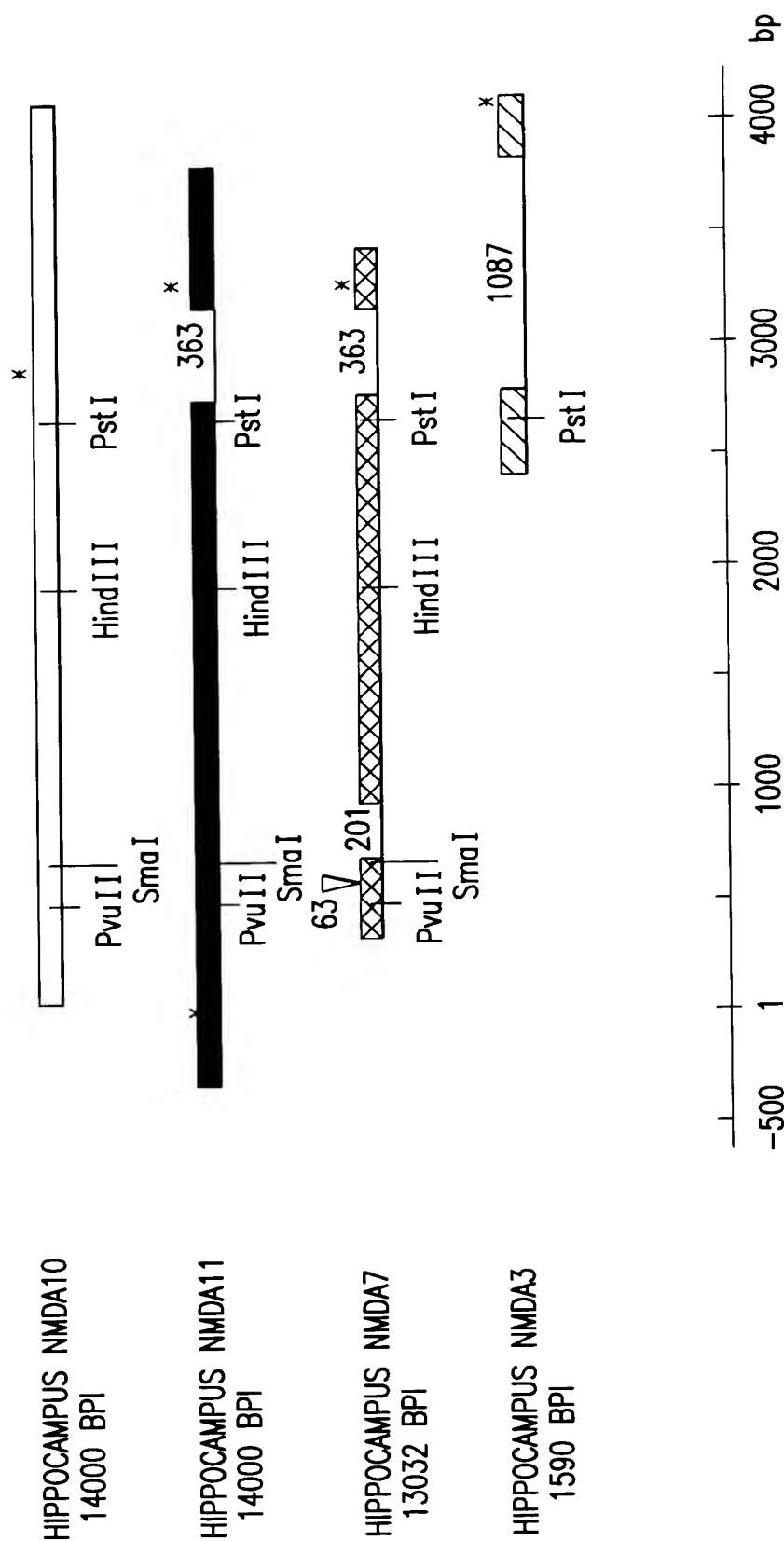
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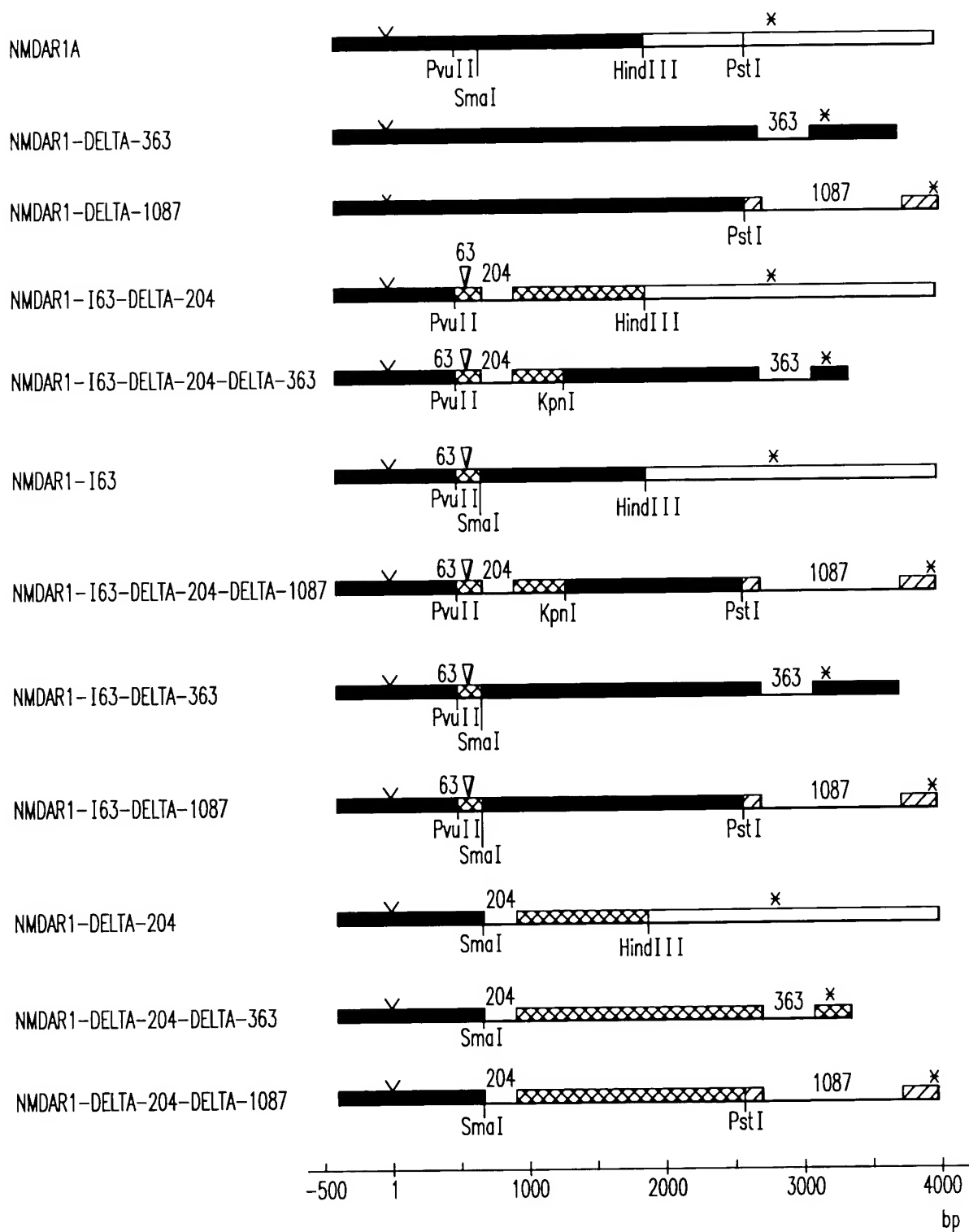
FIG.1

HUMAN NMDAR1A CONSTRUCTS

FIG.2

NUCLEOTIDE SEQUENCE OF THE HUMAN NMDARIA RECEPTOR

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   1  ccagccgggc gttcggaggct gtgcccggcc ccgcttcagc accgccggaca gcgccggccg cgtggggctg agcgccggcc ccccgccgcac gcttcagccc
 101  cccttccctc ggccgacgtc ccgggaccgc cgtccggggg gagacgtggc gtccggagcgca ggacggcccg ggacgcccgc
                                                                                          - START
 201  ggggatgcg ccgagggccc cgcgttcgcg ccggcagag ccggcccgc ggccccgggc catgagcacc ATGGGCGACC TGACGCTCGC CCTGCTGTTC
 301  TCCTGCTCCG TCGCCCGTGC CCGGTGCGGAC CCCAAGATCG TCAACATTGG CGCGGTGCTG AGCACGCGGGA GATGTTCCGC GAGGCGGTGA
 401  ACCAGGCCAA CAAGCGGCAC GGCTCCTGGA AGATTCAGCT CAATGCCACC CCGTGTCAGC ACAAGCCCAA CGCCATCGGG ATGGCTCTGT CGGTGTGCGA
 501  GGACCTCATC TCCAGCCAGG TCTACGCCAT CCTAGTTAGC CATCCACCTA CCCCCAACGA CCACTTCACT TCTCCTACAC AGCCGGCTTC
 601  TACCGCATAC CCGTGCTGGG GCTGACCACC CGGCATGTCCA TCTACTCGGA CAAGAGCATC CACCTGAGCT TCCTGCGCAC CGTGCCGCCC TACTCCCACC
 701  AGTCCCAGCGGT GTGGTTTGAG ATGATCCGTG GAACCACATC TCTACAGCTG TCAGCGACGA CCACGAGGGC CGGGCGGCTC AGAAACGCCT
                                                                                             ⌐Pvu II⌐
                                                                                  ⌐63 bp INSERT⌐
 801  GGAGACGCTG CTGAGCGAGC GTGAGTCCAA GGCAGAGAAG GTGCTGCAGT TTGACCCCAGG GACCAAGAAC GTGACGGCCC TGCTGATGGA GGCCAAAGAG
      ⌐Sma I⌐
 901  CTGGAGGCCC GGGTCATCAT CCTTTCTGCC AGCGGAGGACG ATGCTGCCAC ACGCCCTGCCC CTACGCCCCA GACGGGCATCC TCGGGCTGCA GCTCATCAAC GGCAAGAACC AGTCGGCCCA
      ⌐BglII⌐
1001  GGCTGGTCGG CGACGCCGGAG ATCTCGGGGA ACGCCCTGCCC CTACGCCCCA GACGGGCATCC TCGGGCTGCA GCTCATCAAC GGCAAGAACC AGTCGGCCCA
1101  CATCAGCGGAC GCCCTGGGCG TGGTGCCCCA GGCCGTGCAC GAGCTCCTCG AGAAGGAGAA CATCACCGAC CGCGGGTGGG CTGCGTGGG CAACACCAAC
1201  ATCTGGAAGA CCGGGCCGGCT CTTCCAAGAGA GTGCTGATGT CTTCCAAGTA TGCGGATGGG GTGACTGGTC GCTGGAGTT CAATGAGGAT GGGGACCGGGA
1301  AGTTCGCCAA CTACAGCATC ATGAACCGCAA GCTACTGGTG GCTGAAACGGCAA GTGGGCATCT ACAATGGCAC CCAGTCATC CCTAATGACA GGAAGGATCAT
                                                                       ⌐Kpn I⌐
1401  CTGGCCAGGC GGAGAGACAG AGAAGCCTCG AGGGTACCAG ATGTCCACCA GACTGAAGAT TGTGACGATC CACCAGGAGC CCTTCGTGTA CGTCAAGCCC
1501  ACGCTGAGTG ATGGGACATG CAAGGAGGAG TTCACAGTCA ACGGCGACCC AGTCAAGAAG GTGATCTGCA CCGGGCCCAA CGACACCTCG CCGGGCAGCC
1601  CCCGCCACAC GGTGCCTCAG TGTTGCTACG GCTTTTGCAT CGACCTGCTC ATCAAGCTGG CACGGACCAT GAACTTCACC TACGAGGTGC ACCTGGTGGC
1701  AGATGGCAAG TTCGGCACAC AGGAGCGGGT GAACAACAGC AGTGGAATGG GATGATGGGC GAGCTGCTCA GCTTGACTAT TCTGGTCAAG AAGGAGATTC
1801  GTGGCGCCGC TAACCATAAA CAACGAGCGC GCGCAGTACA TCGAGTTTTC CAAGCCCTTC AAGTACCAGG GCCTGACTGGT CCTGGTGGTG TGTACCTGCT
1901  CCCGGAGCAC GCTGGACTCG TTCATGCAGC CCTTCCAGAG CACACTGTGG CTCTGGTGG GCGTCTGCGGT GCACAGTGGTG GCCGTGATGC TGTACCTGCT
2001  GGACCGGCTTC AGCCCCCTTCG GCCGGGTTCAA GGTGAACAGC GCCGGGGTCCA GGTGAACAGC GAGGAGGAGGGCAG ACTGACCCTG TCCTCGGCCA TGTGGTTCTC CTGGGGCGTC
                                                                                             ⌐204 bp
                                                                                              DELETION⌐
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FIG.3A

HindIII

```
2101  CTGCTCAACT  CCGGCATCGG  GGAAGGCGCC  CCCAGAAGCT  TCTCAGCGCG  CATCCTGGGC  ATGGTGTGGG  CCGGCTTTGC  CATGATCATC  GTGGCCTCCT
2201  ACACCGCCAA  CCTGGCGGCC  TTCCTGGTGC  TGGAGGAGCGC  ATCACGGGCA  TCAACCACCC  TCGGCTGAGG  AACCCCTCCG  AACCCTTTAT
2301  CTACGCCACC  GTGAAGCAGA  GCTCCGTGGA  TATCTACTTC  CCGCGCCAGG  TGGAGCTGAG  CACCATGTAC  CGGCATATGG  AGAAGCACAA  CTACGAGAGT
2401  GCGCGGAGG   CCATCCAGGC  CGTGAGAGAC  AACAAGCTGC  ATGCCTTCAT  CTGGGACTCG  GCGGTGCTGG  AGTTCGAGGC  CTCGCAGAAG  TGCGACCTGG
2501  TGACGACTGG  AGAGCTGTTT  TTCCGCTCGG  GCTTCGGCAT  AGGCATGGCC  AAAGACAGCC  CCTGGAAGCA  GAACGTCTCC  CTGTCCATCC  TCAAGTCCCA
2601  CCAGAATGGC  TTCATGGAAG  ACCTGGACAA  GACCTGGGTT  CGGTATCAGG  AATGTGACTC  GCGCAGCAAC  GCCCTGCCGA  CCCTTACTTT  TGAGAACATG
2701  GCCGGGGTCT  TCATGCTCTGGT  AGCTGGGGGC  ATCGTGGCCG  GGATCTTCCT  GGATCTTCCT  GATTTTCATC  GATATTCATC  ACAAGCGGCA  CGCCGGAAGC

                                                                                  Pst I
2801  AGATGCAGCT  GGCCCTTTGCC  GCCGTTAACG  TGTGGCGGAA  GAACCTGCAG  GATAGAAAGA  GTGGTAGAGC  AGAGCCTGAC  CCTAAAAAGA  AAGCCACATT
2901  TAGGGCTATC  ACCTCCACCC  TGCCTTCCAG  CTTCAAGAGG  CGTAGGTCCT  CCAAAGACAC  GAGCACCCGG  GGTGCACCCG  GTGCTTTGCA  AAACCAAAA
3001 |GACACAGTGC  TGCCCGCACG  CCGTATTGAG  AGGCAGGAGG  GCCAGCTGCA  GCTGTGTTCC  CGTCATAGGG  AGAGC|TGAga  ctcccccgccc  gccctcctct
3101  gccccctccc  ccgagacaga  acagacagac  ggacgggaca  gcggcccggc  ccacgggggtc  gggggggggg  caccccccagc
3201  ctccccagg   ctgcgcctgc  ccgccccgccg  gttgccggc   accccgtccc  ggccccggcc  gtgcccccag  cgtggggcta  acgggcgct  |tgggccccc
3301 |tgtctgtgta  tttctatttt  gcagcagtac  catcccactg  atatcacggg  ccgctcaac   ctctcagatc  cctcggtcag  caccgtggtg  caccgtggtg
3401  gggggcgccc  acctgccccag  ttagcccggc  caaggacact  gatgggtcct  gctgctcggg  aaggcctgag  ggaagcccac  ccgccccaga  gactgcccac
3501  cctgggcctc  ccgtccgtcc  gcccgcccac  ccgctgcct  ggctggggc   aggccctgg   ccctgctgga  ccaaggtgcg  gctgaggagct  gggcagagct
3601  ggtcggctg   ggcagggccg  cagggggctc  caggcgggc   aggccctgg   ggtctctgag  cagtggggg   cggggggctaa  ctgccccag   gcggggggggc
3701  ttggagcaga  gacggcagcc  ccatccttcc  cgcagcacca  gcctgagcca  cagtggggc   catggcccaa  ctgctgtggg  tcgccctcc   tcgggcgct
3801  gcgctcctct  gcagcctgag  ctccacccctc  cctcttctt   gcggcaccgc  gcctcgggc   acccgtctgc  ccttgacgc   cacacgccgg  ggctggcgct
3901  gcctcccccc  acggccgtcc  ctgacttccc  agctgccagc  gcctcgggc   gcctcccgc   gcctcctcca  gaatcgagag  ggctgagccc  ctcctctcct
4001 |cgtccggcct  gcagcacaga  aggggggctc  ccgggggggtc  cccggggggct  ggctcggggc   acctttggga  cctggccctgc  acctttgggca  cggggggagcg
4101  ccccccgccc  gccccccgccc  tcgctccggg  tgcgtgccacc  tgcggcgcgc   ttgtacagaa  ccagcactcc  cagggcccga  gcgcgtgcct  tccccgtgcg
4201  cagccgcgct  ctgcccctcc  gtccccaggg  tgcaggcgcg  caccgcccaa  ccccccacctc  ccggtgtatg  cagtggt|gat  gcctaaagga  atgtcacg
```

363 bp
DELETION

1087 bp
DELETION

FIG.3B

HUMAN NMDAR2C cDNAs

CEREBELLUM NMDA26
13000 BPI

CEREBELLUM NMDA27
14350 BPI

CEREBELLUM NMDA22
14000 BPI

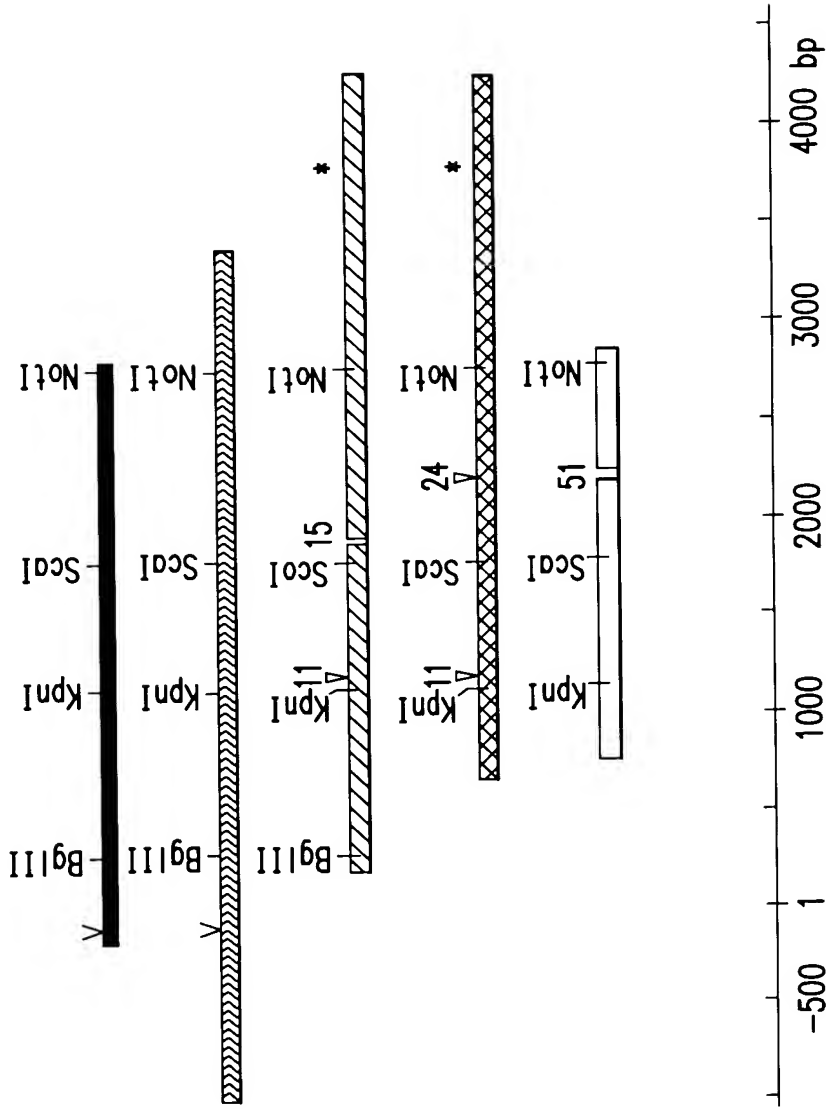CEREBELLUM NMDA24
13500 BPI

CEREBELLUM NMDA21
12000 BPI

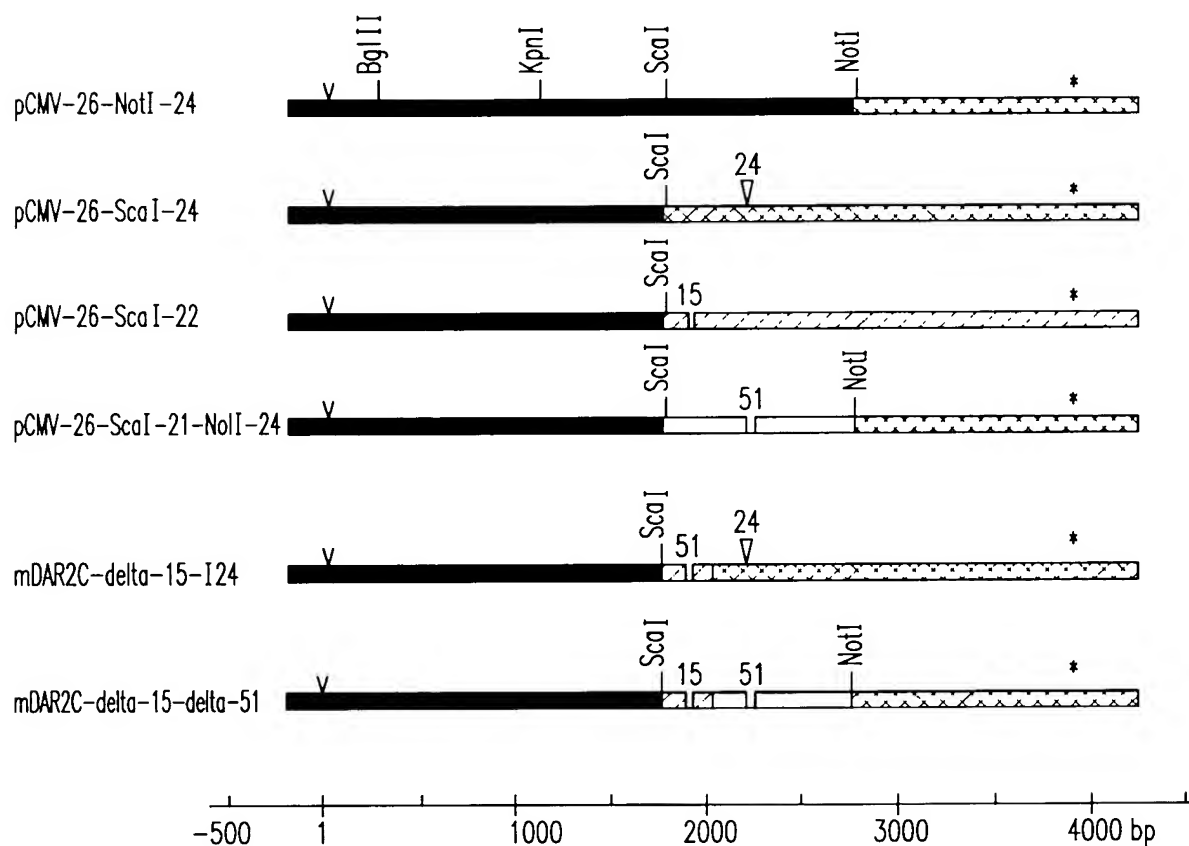FIG.4

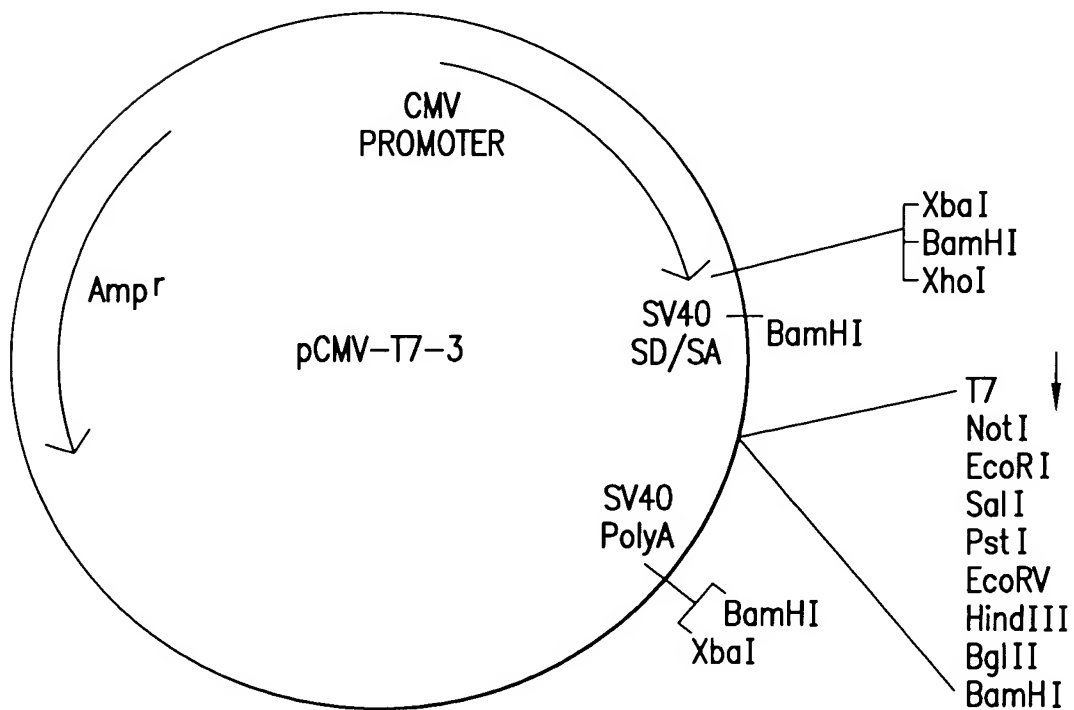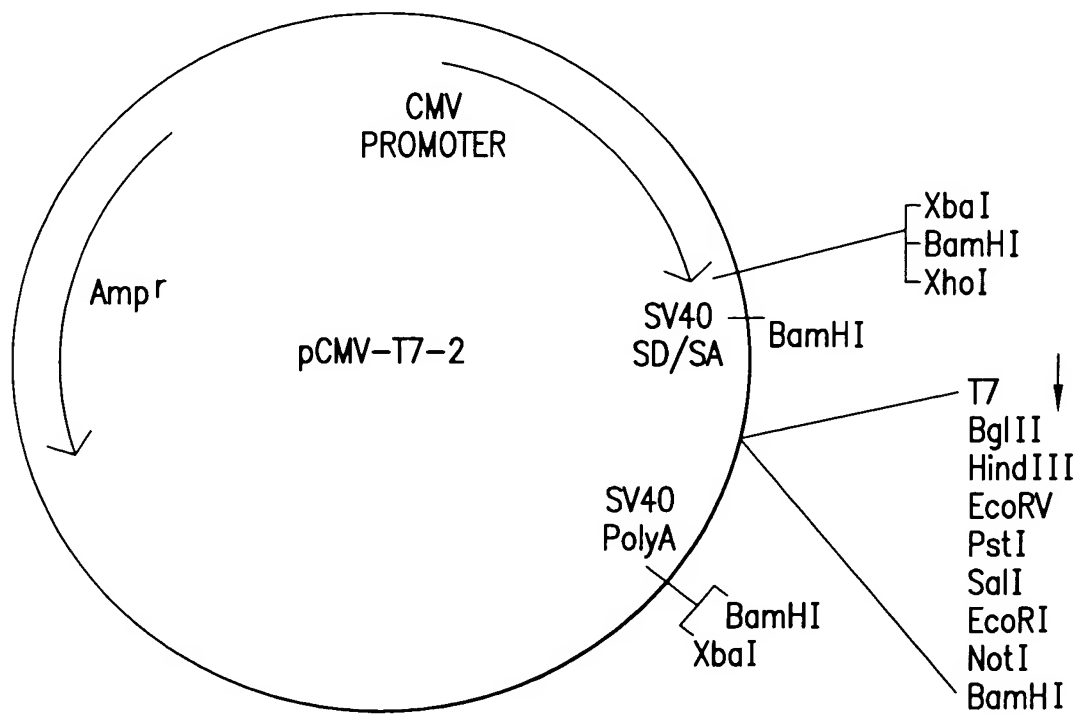CONSTRUCTION OF THE FULL-LENGTH HUMAN NMDAR2C cDNAs

FIG.5

FIG.6